



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,777	10/19/2001	Chia-Hsin Li	API12HO	7340

20178 7590 03/09/2006

EPSON RESEARCH AND DEVELOPMENT INC
INTELLECTUAL PROPERTY DEPT
150 RIVER OAKS PARKWAY, SUITE 225
SAN JOSE, CA 95134

EXAMINER

MILIA, MARK R

ART UNIT PAPER NUMBER

2622

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,777

Applicant(s)

LI ET AL.

Examiner

Mark R. Milia

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12, 14-19 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 6, 13 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Applicant's amendment was received on 1/23/06 and has been entered and made of record. Currently, claims 1-23 are pending. The new examiner of record for this case is Mark R. Milia.

Response to Arguments

2. Applicant's arguments, see pages 13-16, filed 1/23/06, with respect to the rejection(s) of claim(s) 1-23 under 35 U.S.C. 102(b) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art.

Claim Objections

3. Claims 2, 9, and 26 are objected to because of the following informalities: Claims 2, 9, and 16 fail to end in a period. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, 7-12, 14-19, and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6330374 to Yamaguchi et al.

6. Regarding claims 1, 8, and 15, Yamaguchi discloses a computing system for printing a target image, comprising: a first memory space for storing said target image (see Figs. 4 and 5 and column 6 lines 11-14), a second memory space smaller than said first memory space (see Figs. 4 and 5, column 2 lines 1-4, and column 4 lines 53-66), a data processing unit for applying a sub-dividing algorithm to said target image to generate an array of rows and columns of sub-image tiles, each of said sub-image tiles being sized to be storable within a predetermined amount of memory capacity not greater than that of said second memory space, said target image being the composite of said sub-image tiles (see Figs. 8-10, column 4 lines 53-66, column 5 lines 1-17, and column 13 line 63-column 14 line 19), a communication link coupling said first memory

space to said second memory space for transferring each of said sub-image tiles in turn from said first memory space to said second memory space (see Figs. 4 and 5, column 11 lines 46-65, column 12 lines 13-25, and column 13 lines 1-18), said data processing unit further implementing an image generating routine for generating a printable sub-image block of each sub-image tile within said second memory space, assigning each printable sub-image block a coordinate parameter identifying a target location within a composite memory space, and transferring each printable sub-image block from said second memory space to a printer driver routine prior to transferring the next sub-image tile from said first memory space to said second memory space (see column 13 lines 1-18, column 13 line 63-column 14 line 31, and column 15 lines 15-55), wherein said printer driver routine correlates said composite memory space with the printable space on a printing media and controls the printing of each of said sub-image blocks to locations within said printing media in accordance with their respective coordinate parameter (see column 2 lines 5-9, column 12 lines 13-25, column 13 lines 1-18, column 13 line 63-column 14 line 31, and column 15 lines 15-55).

Regarding claims 2, 9, and 16, Yamaguchi discloses the system discussed in claims 1, 8, and 15, and further discloses printing a rotated representation of said target image by assigning the coordinate parameter of each said sub-image blocks such that the assigned coordinate parameter corresponds to a shifting of each sub-image tile within said array of sub-image tiles by a predetermined offset amount (see column 13 line 63-column 14 line 31, column 15 lines 15-55, and column 17 line 47-column 18 line

28) and rotating each of said sub-image blocks prior to sending them to said printer driver (see column 13 line 63-column 14 line 31).

Regarding claims 3, 10, and 17, Yamaguchi discloses the system discussed in claims 2, 9, and 16, and further discloses wherein said shifting of said sub-image tiles within said array of sub-image tiles corresponds to a coordinate shift within said array such that a target sub-image tile at a first corner within said array is shifted to an adjacent corner and all other sub-image tiles within said array are shifted accordingly to maintain a constant positional relation with said target sub-image tile (see Figs. 8-10 and column 12 lines 13-25).

Regarding claims 4, 11, and 18, Yamaguchi discloses the system discussed in claims 3, 10, and 17, and further discloses wherein said sub-image tiles are transferred from said first memory space to said second memory space in a sequence order beginning with said target sub-image tile followed by adjacent sub-image tiles, in turn (see Figs. 8-10, column 13 line 63-column 14 line 31, and column 15 lines 15-55).

Regarding claims 5, 12, and 19, Yamaguchi discloses the system discussed in claims 1, 8, and 15, and further discloses printing a non-rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each row of said array in succession (see column 4 lines 53-66, column 5 lines 1-18, and column 19 line 38-column 21 line 19, reference states that an image is divided into sub-images that are processed in a plot image repetition process that does no rotate the image and that may use repeat the entire image, utilizing the sub-images, which is analogous to the claim limitation) and printing a rotated representation of said

target image by sending each sub-image tile from said array of sub-image tiles in alignment with each column of said array in succession (see column 13 line 63-column 14 line 31, column 15 lines 15-55, and column 17 line 47-column 18 line 28).

Regarding claims 7 and 14, Yamaguchi discloses the system discussed in claims 1 and 8, and further discloses wherein the size of said second memory space is insufficient for storing said target image in its entirety (see column 2 lines 1-4, column 4 lines 53-66, and column 5 lines 1-18).

Regarding claims 21-23, Yamaguchi discloses the system discussed in claims 1, 8, and 15, and further discloses wherein said target image in said first memory space encompasses an entire page of said printing media (see Fig. 1, column 4 lines 8-23 and 51-53, and column 8 lines 24-27, reference shows a system based around a digital copier of multi-function device in which a document is scanned into the system for copying, therefore the image is an entire page of a printing media).

Allowable Subject Matter

7. Claims 6, 13, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The examiner believes that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to combine the defining of a maximum

image area corresponding to a predetermined amount of memory capacity and if a target image is greater than the maximum image area, repeatedly dividing the target image into sub-images based on the height and width of the image until the sub-image is small enough to fit into the image area of the memory, with the other limitations recited in claims 1, 8, and 15.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. To further show the state of the art refer to the attached Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Milia whose telephone number is (571) 272-7408. The examiner can normally be reached M-F 8:00am-4:00pm.

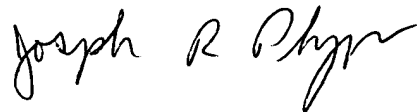
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached at (571) 272-7471. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark R. Milia
Examiner
Art Unit 2622

MRM

JOSEPH R PORZYWA
PRIMARY EXAMINER
ART UNIT 2622

A handwritten signature in black ink, appearing to read "Joseph R. Porzywa", written in a cursive style.